

Appl. No. 10/725,657

REMARKS

Rejections Under 35 USC § 103

The Examiner has rejected the claims as obvious over Morin, Jr. et al. ("Morin" - US 5,714,503) in view of Talley et al. ("Talley" - US 5,475,027). The Examiner contends that Morin teaches several species of thiourea having cyclopropyl and thiazolyl (or thiadiazolyl) which correspond to the instant urea compounds having R₁ as thiazolyl or thiadiazolyl and R₂ as R₅-cyclopropyl(cis). The Examiner acknowledges that they differ from the instant compounds of formula IA by being a thioruea (i.e. -N-C(=S)-N-) and not a urea (i.e. -N-C(=O)-N-).

The Examiner attempts to cure this deficiency by citing Talley. Here, the Examiner contends that Talley discloses a generic formula (I) which represents a group of thiourea and urea compounds that can inhibit HIV protease. From this the Examiner concludes that Talley teaches that thiourea and urea are equivalents. From this reasoning the Examiner urges that such equivalency would have motivated the skilled artisan to replace the thiourea group in Morin's compounds with the urea group because they would have expected the urea compounds to have the same inhibitory activity on the HIV protease, making the instant invention obvious. Applicants respectfully traverse.

Applicants first point out that the instant invention is directed to compounds that are effective as HIV reverse

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transcriptase inhibitors (see the instant Specification page 21, lines 29-31, page 24, lines 25-27 and the assay I values presented on pages 25 and 26) and not protease inhibitors. Reverse transcriptase is an enzyme which ligates deoxyribonucleic acid residues into DNA strands based on an RNA template. On the other hand, proteases operate by a mechanism which cleaves peptide chains at defined residues. That is, these two types of enzymes have nothing in common at the functional level. As such, one skilled in the art would recognize that drugs active on one of these enzyme classes would not provide guidance for developing drugs against the other class of enzymes. In fact, it is well known that a particular drug may not be effective against another enzyme in the same class. In fact, Talley et al teach this very thing at column 2, lines 2-5 where they state "However, it is known that, although rennin and HIV proteases are both classified as aspartyl proteases, compounds which are effective rennin inhibitors generally cannot be predicted to be effective HIV protease inhibitors." This statement not only teaches away from motivating the skilled artisan to substitute urea for thiourea, but underscores the nonobviousness of using the urea based compositions of the instant invention for a completely unrelated group of enzymes. Consequently, Applicants respectfully request reconsideration and removal of the rejection.

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Double Patenting Rejection

The Examiner has rejected the claims under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 and 11-13 of US 5,714,503 and over claims 1-5 and 7-9 of US 5,593,993 in view of Talley et al (US 5,745,024) contending that the instant urea compounds are obvious over the thiourea compounds in US '503 and US '933 in view of Talley et al. teaching equivalency between thiourea and urea for the inhibition of HIV proteases. Applicants respectfully traverse.

As explained above, the instant invention is not obvious over the combination of either US 5,714,503 and Talley et al. or US 5,593,993 and Talley et al. Applicants therefore respectfully request reconsideration and removal of the rejection.

In view of the above remarks, all of the claims remaining in the case are submitted as defining non-obvious, patentable subject matter.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Leonard R. Svensson (Reg. No. 30,330) at the 714-708-8555, to conduct an interview in an effort to expedite prosecution in connection with the present application.

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

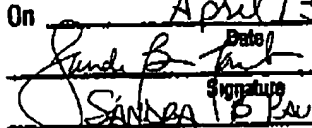
Respectfully submitted,

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